

Appl. No. 09/724,548  
Amdt. dated Sep. 13, 2004  
Reply to Office action of Apr. 13, 2004

### REMARKS/ARGUMENTS

#### Claim Status

Claims 1-69 are pending. The Examiner has rejected claims 1-62 and 67-69 and has objected to claims 63-66. Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

#### Rejections under 35 U.S.C. §112, second paragraph

The Examiner has rejected claims 67-69 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the Examiner states that there is insufficient antecedent basis for the limitation "target loops" in the claim (emphasis in the original Office action). Applicants have amended claims 67-69 to remove the limitation target. Support for the amendment may be found throughout the specification and therefore this amendment does not introduce any new matter under 35 U.S.C. §132. In view of this amendment, Applicants respectfully request withdrawal of this rejection.

#### Rejections under 35 U.S.C. §102

The Examiner has rejected claims 1-62 under 35 U.S.C. §102(e) as being anticipated by Lipshutz et al., US Patent No. 6,043,080 A. According to the Examiner, Lipshutz teach an apparatus comprising: a loop channel, which essentially comprises a recirculation of fluid flow

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between a reaction chamber and a pump, communicating with at least one service channel, such as a channel connecting the reaction chambers; a microvalve separating the loop channel from the service channel; and a pump associated with the loop channel. The Examiner attempts to demonstrate that Lipshutz anticipates Applicants' claimed invention, chiefly by stating that column 2, lines 56-65 and column 27, lines 64-column 30, line 9 disclose a loop channel system wherein fluid is recirculated. Applicants respectfully traverse this rejection for the following reasons.

Lipshutz does not disclose recirculation of fluid within a microfluidic system as claimed by applicants. For a reference to anticipate, it must disclose each and every element of the claimed invention, which Lipshutz does not. Nowhere does Lipshutz disclose recirculation. Indeed, the whole point to Lipshutz is that the sample liquid is move through the fluidic system in a unidirectional manner. For example, cells are lysed in one region, the lysate is then moved to another region for amplification, then the amplified product is moved onto an array. There would be no point for Lipshutz to circulate the post-amplified product back through the same system as is claimed by Applicants. Moreover, the Examiner attempts to distort Lipshutz into Applicants claimed invention by stating that Applicants have merely used an old device in a new way, however, there is no showing by the Examiner of any embodiment of Lipshutz that fairly suggests recirculation of a sample liquid about a loop channel. Nor do the terms "loop" or "recirculate" exist in Lipshutz, nor does Lipshutz even suggest recirculation of a sample. "Looping" is mentioned only with respect to the formation of a loop structure with a nucleic acid molecule. Accordingly, it cannot be fairly said that Lipshutz discloses the recirculation of a sample liquid about a loop channel in a fluidic system. Applicants respectfully request withdrawal of this rejection.

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### **Rejections under 35 U.S.C. § 103**

The Examiner has rejected claims 67-69 under 35 U.S.C. §103(a) as being unpatentable over Lipshutz, stating that although Lipshutz does not specifically disclose the number of target loops (now just loops) recited in the claims, one of ordinary skill in the art would know to increase the number of loops within a device. Applicants respectfully traverse this rejection for the following reasons.

Lipshutz does not disclose each and every element of the claimed invention, as discussed above. Moreover, Lipshutz provides no guidance as to how one would build a multi-loop system since it doesn't even disclose a single loop system. Accordingly, it cannot be said that Lipshutz renders Applicants claimed invention obvious under §103(a). Applicants respectfully request withdrawal of this rejection.

### **Allowable Claims**

Applicants appreciate the Examiner acknowledging that claims 63-66 are patentable if rewritten in independent form, however, Applicants believe all of the pending claims are allowable for the reasons discussed above. Accordingly, Applicants respectfully request that all claims pending be allowed.

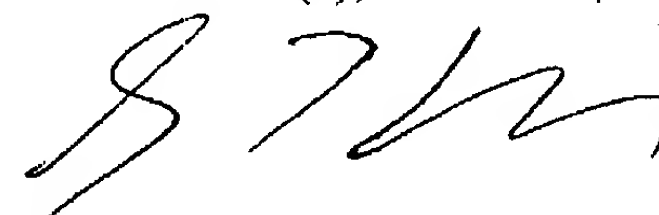
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### CONCLUSION

Applicants believe that all of the claims pending are in a condition for allowance, thus, a Notice of Allowance for all claims is respectfully requested. If, in the Examiner's opinion, an interview would be helpful, please contact the undersigned at the number below. Although Applicants counsel on the instant response is not of record prior to this response, Associate Power of Attorney is being co-filed with this response. Lastly, Applicants sincerely appreciate the well-demonstrated effort the Examiner has made in thoroughly considering the instant application, however, reconsideration in view of the remarks made herein is appreciated.

Respectfully submitted under

37 C.F.R. 1.34(a),



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**07278**